AGENDA ITEM K-2

CITY OF LODI
COUNCIL COMMUNICATION

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AGENDA TITLE: Adopt resolution requesting that the San Joaquin County Board of Supervisors establish a 5 mile per hour speed limit on the Mokelumne River from the Woodbridge Dam to Guild Avenue

MEETING DATE: March 19, 2008

PREPARED BY: Interim Park and Recreation Director

RECOMMENDED ACTION: Adopt resolution requesting that the San Joaquin County Board of Supervisors establish a 5 mile per hour speed limit on the Mokelumne River from the Woodbridge Dam to Guild Avenue.

BACKGROUND INFORMATION: On February 20,2008, Council received a staff report regarding the status of the Mokelumne River bank in the general vicinity of Pigs Lake within Lodi Lake Nature Area. As part of the staff report, Council was presented information about possible causes for the current riverbank conditions. In 1992, the Mokelumne River Access Task Force submitted several recommendations to the Council related to this matter. The Task Force felt strongly that motorized water craft were negatively impacting the riverbanks along Lodi Lake Park. The Task Force recommended that a 5 mph speed limit be imposed adjacent to all City of Lodi properties. Members of the Task Force felt that natural water movement was not a cause of erosion. The members suggested that high speed motorcraft is a strong contributor to riverbank erosion.

Recently, Park staff consulted civil engineers Kjeldsen, Sinnock and Neudeck Inc. regarding erosion concerns. Stephen Sinnock addressed these concerns in his letter to the City dated October 17,2007 Mr. Sinnock states that erosion is being caused by water hydraulics, wave wash from personal water crafts, and by the annual draining of Lodi Lake.

Based on staffs review of riverbank erosion discussions with various sources, it is our recommendation that a restricted speed limit of 5 mph from Woodbridge Dam to Guild Avenue be implemented.

FISCAL IMPACT: None

Steve Dutra
Interim Parks and Recreation Director

cc: City Attorney

APPROVED: _____
Blair King, City Manager

EXHIBIT A

KJELDSEN, SINNOCK & NEUDECK, INC.
CIVIL ENGINEERS AND LAND SURVEYORS

STEPHEN K. SINNOCK
CHRISTOPHER H. NEUDECK

KENNETH L. KJELDSEN
RETIRED

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0007-0510

October 17, 2007

Mr. Steve Dutra
Lodi Parks & Recreation Department
125 N. Stockton Street
Lodi, CA 95240

Re: Lodi Lake Nature Area Erosion Along Mokelumne River

Dear Mr. Dutra,

On August 30, 2007 Bill Darsie and I participated in a tour and inspection of Lodi Lake erosion sites along the Mokelumne River with you and Mr. Richard Prima of the City of Lodi. The primary purpose of the inspection was to look at an erosion site that is threatening a thin strip of land separating the Mokelumne River and the Pig Lake. An additional inspection occurred on October 13, 2007 after Lodi Lake had been drained for the season. This additional inspection allowed for viewing the area that was not visible and under water during the first inspection. Kjeldsen, Sinnock & Neudeck, Inc. submits herewith its proposal to prepare a preliminary report discussing the likely causes of the erosion, a discussion of the options to remediate and restore the eroded areas, a discussion of the permitting issues related to the repairs and preliminary projections for the cost of the repairs.

Current Site Conditions

As shown in the attached photos, erosion has occurred on the right bank of the Mokelumne River upstream of the Lodi Lake dam in the vicinity of Pig Lake. The erosion site is approximately 300 feet in length and is located just downstream of a 180 degree bend in the River that causes the lower portions of the river bank at the site to be exposed to the hydraulic cutting action of the river. Erosion is occurring higher up on the river bank slope at the waterline due to wave run up from the wakes of watercraft. This wave erosion has caused undercutting of the bank up to 3 feet in some places. The soil at the site is predominately a cohensionless, fine silty sand that erodes quite readily.

There are several conditions occurring in this area of the river that may be contributing to the aggressive erosion of this particular segment of riverbank.

First, there is hydraulic erosion occurring below the waterline that has undermined and washed out a previous repair project that was completed in 1994 (see attached drawings dated 12/93). The erosion area is located on the outside of a bend in the river, where velocities tend to be the greatest. The previous repairs appear to have consisted of stacking a grid of tree roots and logs along the eroded bank and cabling them to existing live trees along the shoreline. Remnants of the trees and logs used for the 1994 *repair* project remain scattered throughout the river bottom and bank of the site as shown in the attached photos. The remnant trees and logs may be aggravating the hydraulic cutting action of the river as they could be creating eddies and turbulence that are contributing to the erosion of the river bank.

Second, there appears to be wave wash erosion occurring at the summer water line when Lodi Lake is full. The waves are generated by both boats and wind. This erosion is clearly defined and localized at the top of the waterside slope. The wave wash was observed during the August inspection when watercraft passed the site.

Third, the erosion may be aggravated by the annual draining of Lodi Lake. The rapid drawdown of the lake in the fall may contribute to the erosion by not allowing the saturated riverbank materials to gradually drain. A rapid drawdown may cause sloughing of the cohesionless sands on the upper portions of the riverbank.

Following a review of the 1994 repair project plans and the inspection observations, it is estimated that approximately 4 to 10 feet of the embankment crest has eroded away. In some places less than 15 feet of riverbank separate the river from Pig Lake.

If the continuing erosion is not addressed, there is a high potential for a breach of the embankment that separates Pig Lake and the Nature Area from the river.

The environmental review process for work in the river is complicated and is often very time consuming due to the number of State and Federal agencies, and the wide spectrum of protected species potentially involved. The environmental impacts resulting from not performing erosion protection repairs could be catastrophic for Pig Lake, the Nature Area and the entire Lodi Lake Park. The environmental issues associated with the site will likely dictate the repair options that are viable.

Based upon our understanding of the issues and the City's goals, it is our recommendation that the scope of work for the preliminary report include the following,

Proposed Scone of Work for Preliminary Report

The following is a description of the scope of services KSN proposes to provide to prepare a preliminary report.

- Communicate with State and Federal Regulatory Agencies to develop an understanding and outline of the regulatory issues and concerns, and the scope of the permitting effort required for a repair project. The State and Federal agencies to be contacted will include the following:

- State Department of Fish & Game
- U.S. Army Corps Of Engineers Regulatory
  - NOAA Marine Fisheries
  - US Fish & Wildlife Service
- Central Valley Regional Water Quality Control Board
- State Reclamation Board
- Other Local, State and Federal agencies as necessary

- Perform detailed site inspection to determine the limits of the repair area and the general magnitude of the material quantities required for the repair and restoration of the riverbank.
  - Lay out limits of repair site
  - Determine typical cross-section of existing condition
  - Identify specific issues that would affect the repair options
    - Preliminary hydraulic evaluation
    - Preliminary assessment of soils
    - Review access routes to public streets
    - Prepare preliminary quantity calculations

- Evaluate the practicality of interim protective measures to minimize further loss of the riverbank.
  - May be necessary to limit damage this winter
  - Measures to limit erosion until more permanent repairs can be permitted
    - Geotechnical fabrics
    - Sand bags
    - Plastic sheeting
    - Thin band of riprap to stabilize slope
  - Communicate with regulatory agencies to determine what actions are allowable

- Perform preliminary site survey and prepare schematic site map
  - Prepare typical river bank cross-sections at erosion site
  - Determine actual length of erosion site

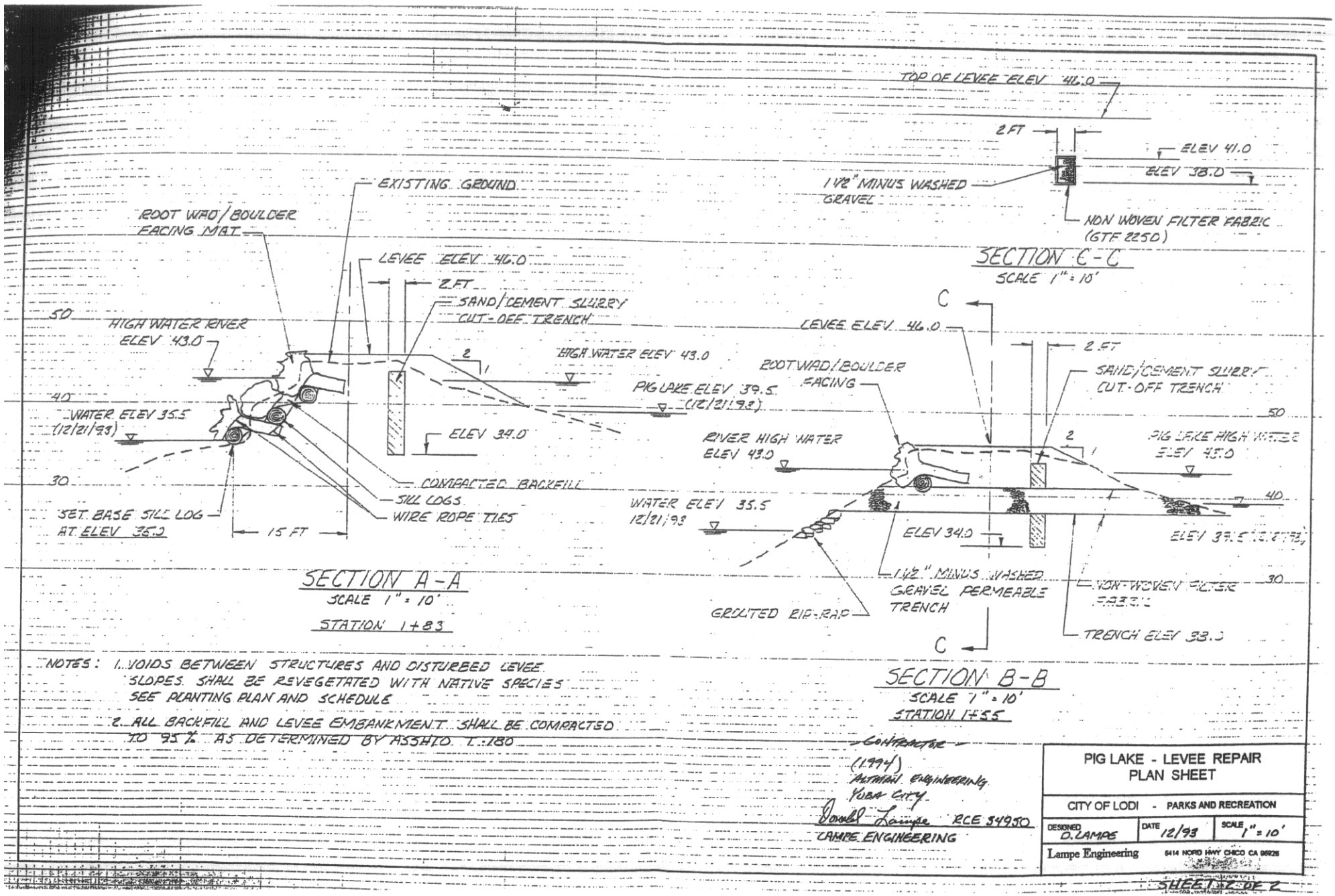
- Prepare letter report outlining initial findings and recommendations
  - Letter report will include discussions on the following
    - Probable causes of erosion
    - Permitting issues related to repairs
    - Erosion repair options
    - Preliminary quantity estimates for repair options
    - Preliminary cost estimates for repair options

KSN proposes to provide the above described scope of work on a time and materials basis in accordance with our current Prevailing Wage Fee Schedule, for a not to exceed fee of $4,900. We appreciate you having considered KSN for this project and we look forward to working with you and your staff. If you have any questions regarding this proposal, or if you require additional information, please call Bill Darsie, or myself, at (209) 946-0268.

Sincerely,
KJELDSEN, SINNOCK & NEUDECK, INC

Stephen K. Sinnock

w/enclosures



NOTES: 1. VOIDS BETWEEN STRUCTURES AND DISTURBED LEVEE SLOPES SHALL BE REVEGETATED WITH NATIVE SPECIES SEE PLANTING PLAN AND SCHEDULE

2. ALL BACKFILL AND LEVEE EMBANKMENT SHALL BE COMPACTED TO 95% AS DETERMINED BY ASSHTO T-180

CONTRACTOR (1994)
ALTMAN ENGINEERING
YUBA CITY

Donald Lampe RCE 34950
LAMPE ENGINEERING

PIG LAKE - LEVEE REPAIR
PLAN SHEET

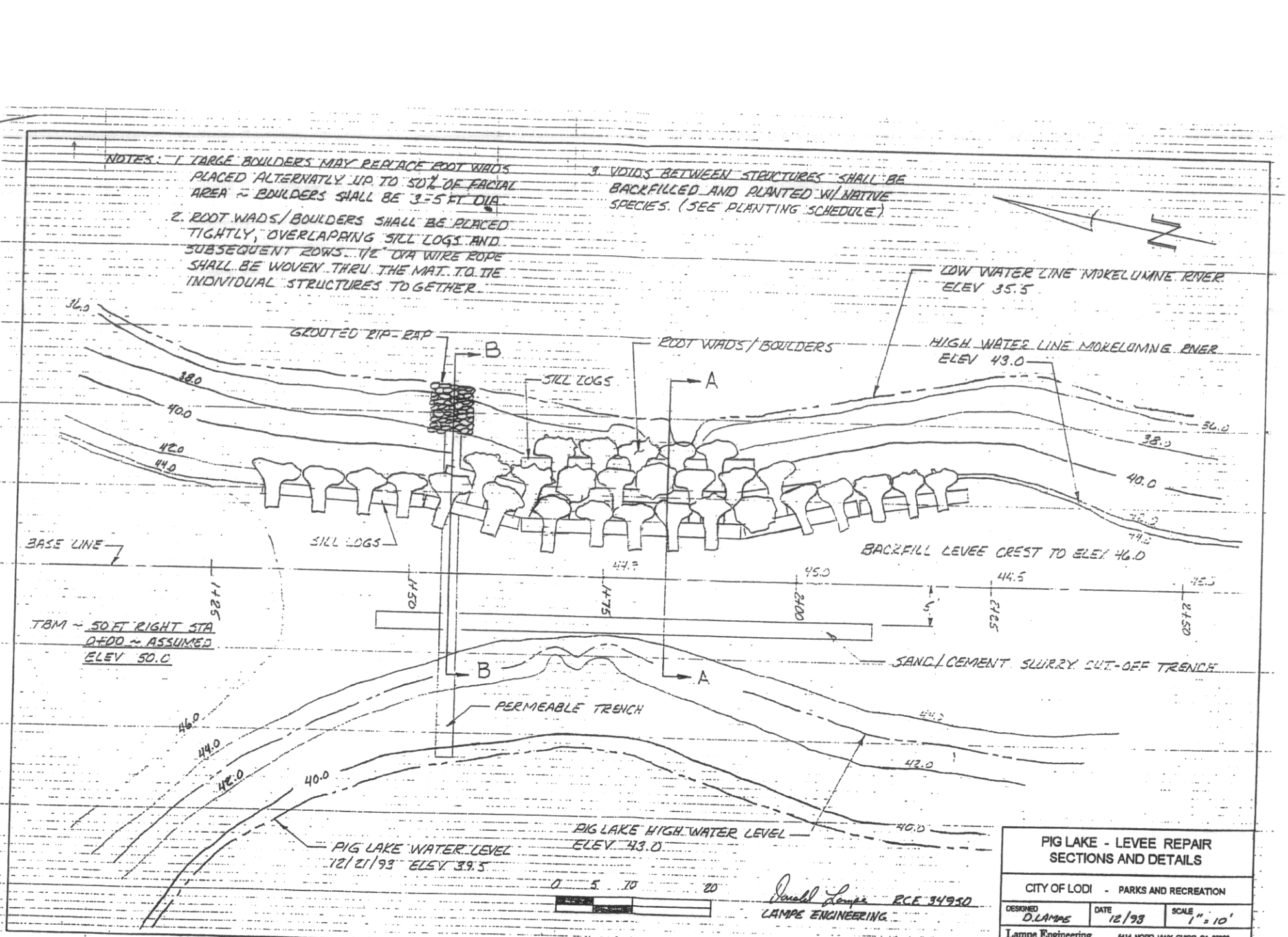
CITY OF LODI - PARKS AND RECREATION

DESIGNED	DATE	SCALE
D. LAMPE	12/93	1" = 10'

Lampe Engineering 5414 NORD HWY CHICO CA 95926

SHEET 2 OF 2

NOTES:
1. LARGE BOULDERS MAY REPLACE ROOT WADS PLACED ALTERNATLY UP TO 50% OF FACIAL AREA ~ BOULDERS SHALL BE 3-5 FT DIA.
2. ROOT WADS/BOULDERS SHALL BE PLACED TIGHTLY, OVERLAPPING SILL LOGS AND SUBSEQUENT ROWS. 1/2" DIA WIRE ROPE SHALL BE WOVEN THRU THE MAT TO TIE INDIVIDUAL STRUCTURES TOGETHER.
3. VOIDS BETWEEN STRUCTURES SHALL BE BACKFILLED AND PLANTED W/ NATIVE SPECIES. (SEE PLANTING SCHEDULE)



Donald Lampe RCE 34950
LAMPE ENGINEERING

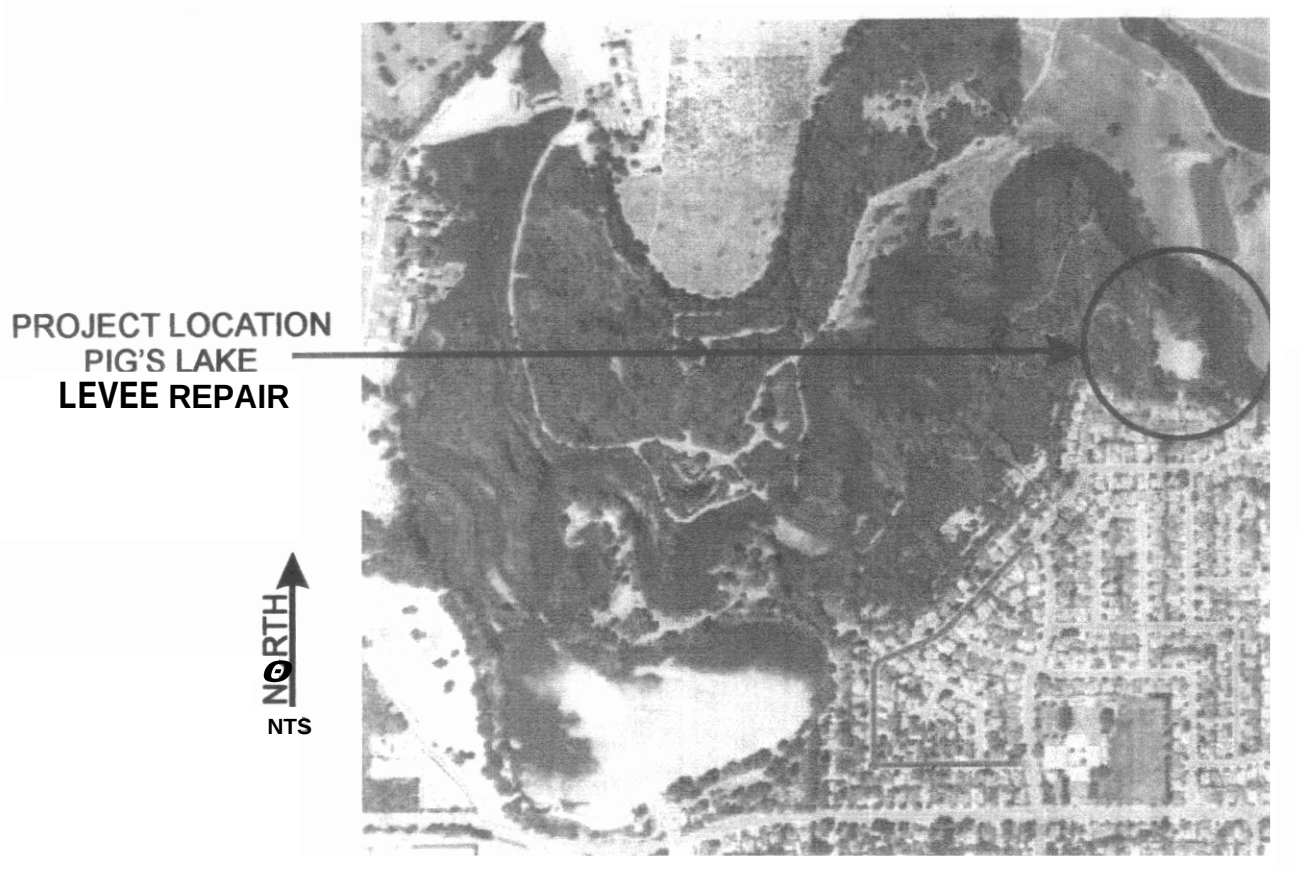
PIG LAKE - LEVEE REPAIR
SECTIONS AND DETAILS

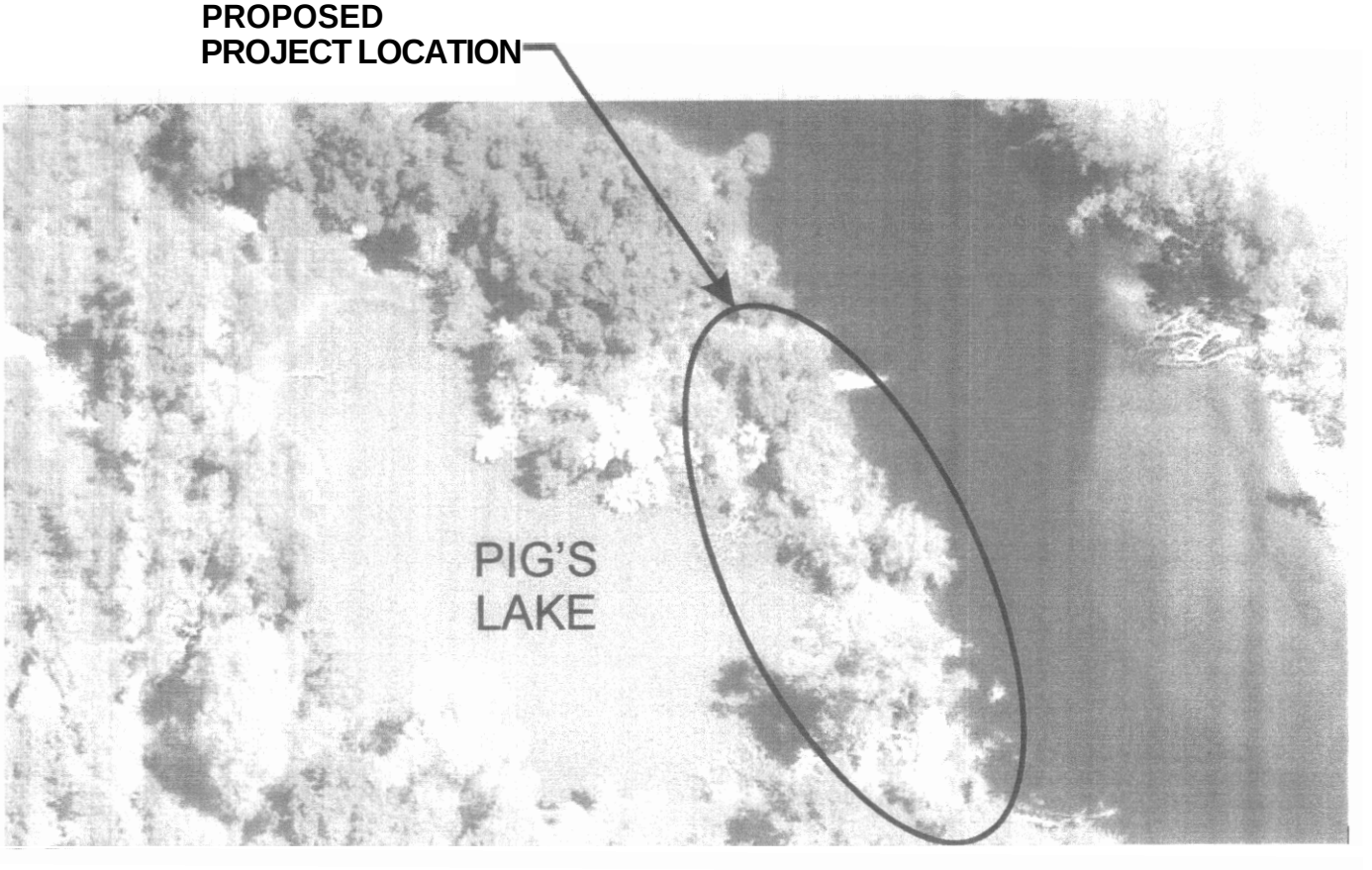
CITY OF LODI - PARKS AND RECREATION

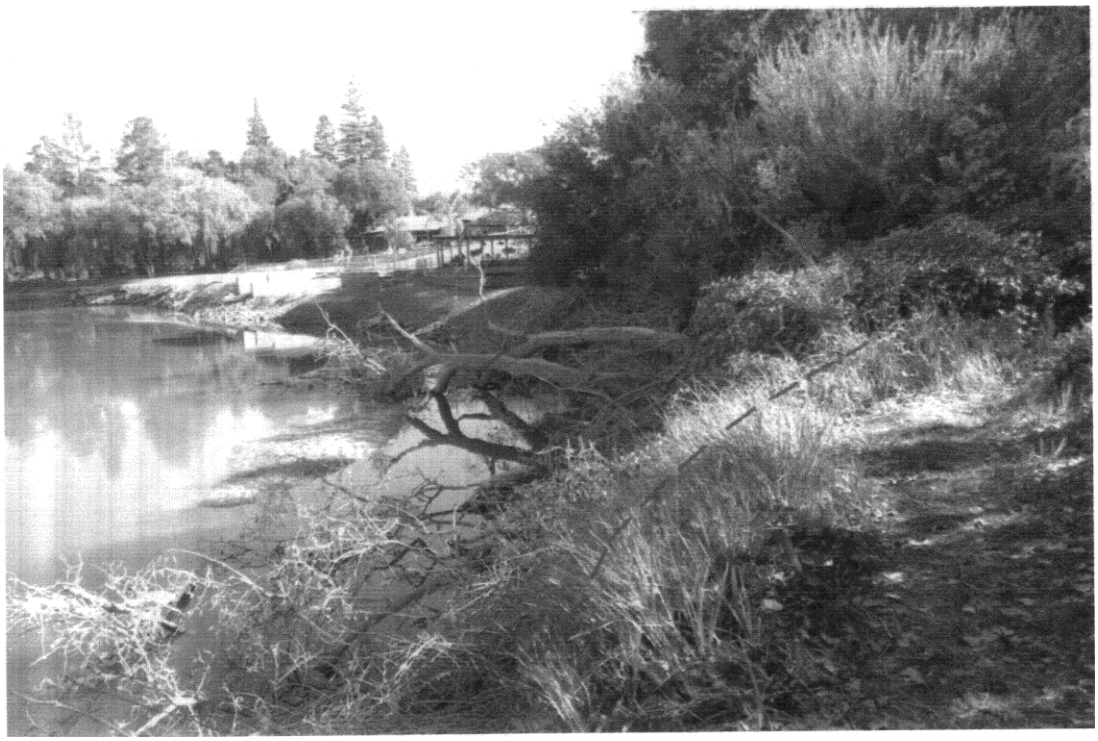
DESIGNED	DATE	SCALE
D.LAMPE	12/93	1" = 10'

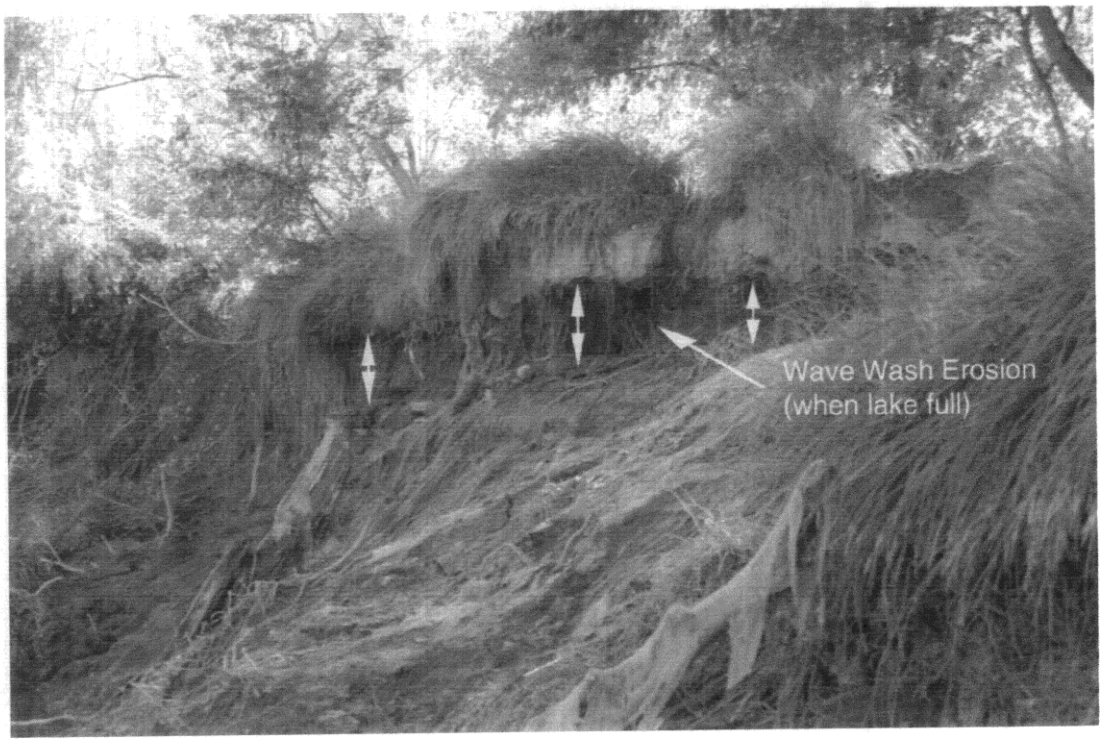
Lampe Engineering 5414 NORD HWY CHICO CA 95926

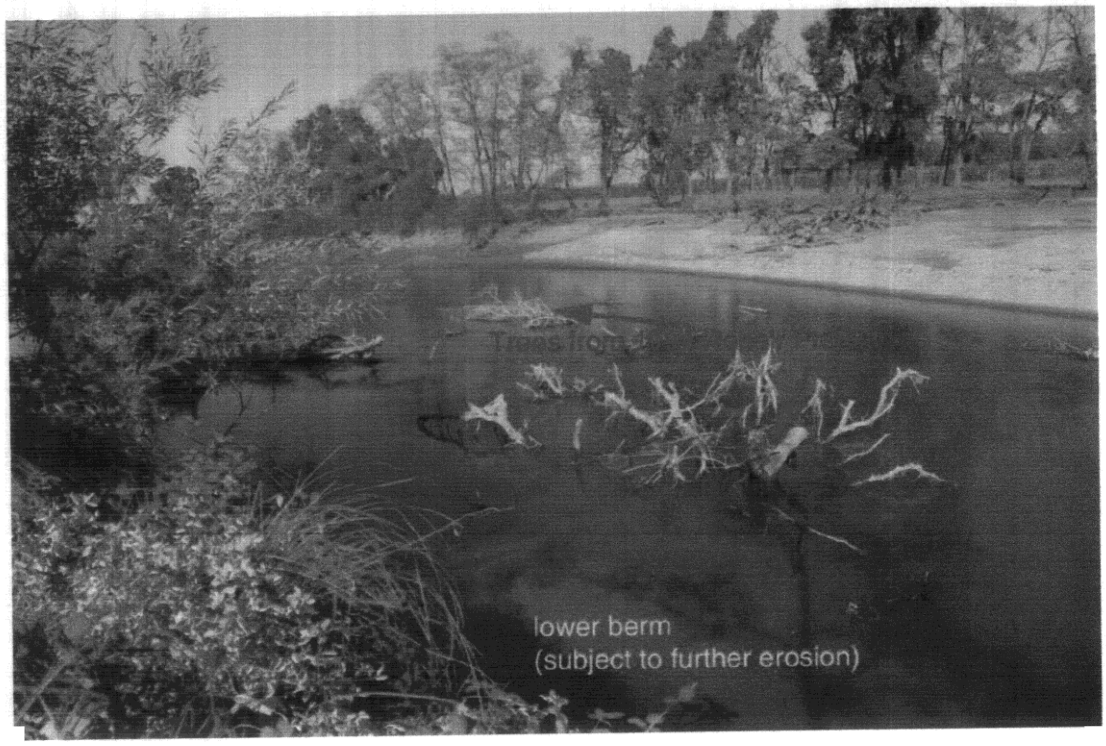
LODI LAKE PARK - PIG'S LAKE
PROPOSED LEVEE REPAIR PROJECT

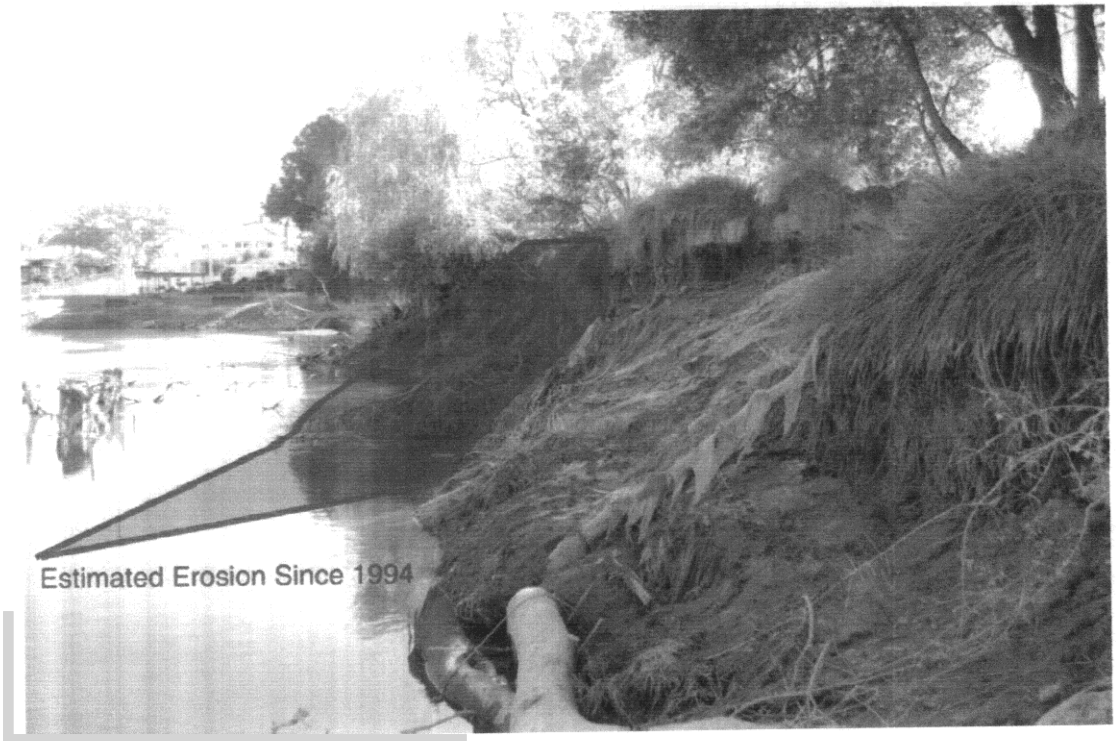




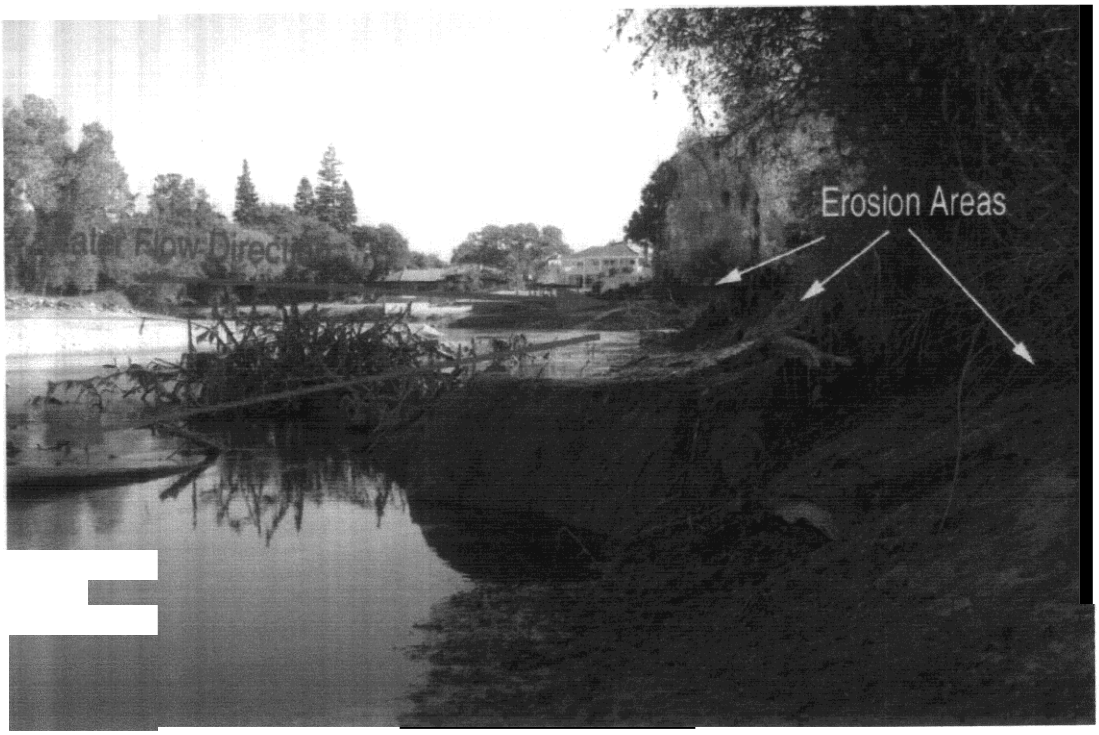


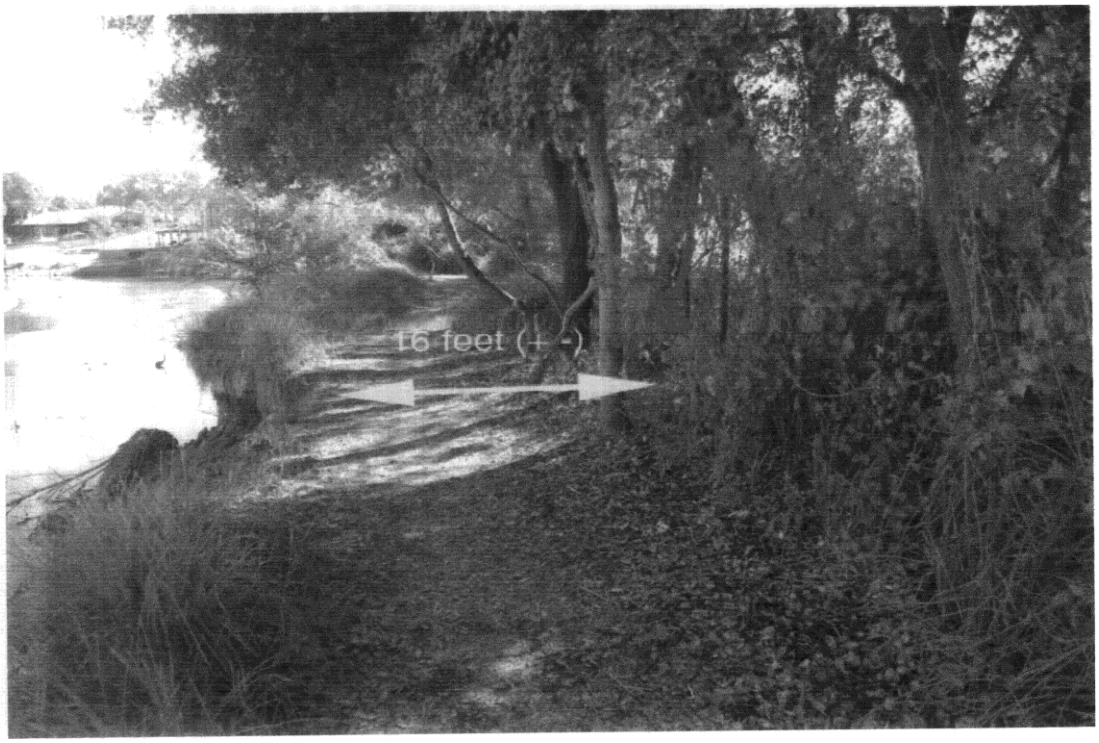

Wave Wash Erosion
(when lake full)


lower berm
(subject to further erosion)


Estimated Erosion Since 1994

Lodi Lake Park
Mokelumne River/Pig Lake Erosion Sites





DRAFT

RESOLUTION NO. 2008-____

A RESOLUTION OF THE LODI CITY COUNCIL REQUESTING THAT THE SAN JOAQUIN COUNTY BOARD OF SUPERVISORS ESTABLISH A 5-MILE PER HOUR SPEED LIMIT ON THE MOKELUMNE RIVER FROM THE WOODBRIDGE DAM TO GUILD AVENUE

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WHEREAS, staff recently presented a report to the City Council regarding the condition and possible causes of the Mokelumne Riverbank deterioration in the general vicinity of Pigs Lake within the Lodi Nature Area; and

WHEREAS, the bank between the Mokelumne River and Pigs Lake has eroded from 30 feet to 16 feet in the time between 1994 and the present; and

WHEREAS, staff consulted with civil engineers Kjeldsen, Sinnock and Neudeck, Inc. regarding the erosion concerns, and it was determined that the erosion is being caused by water hydraulics, wave wash from personal watercrafts and the annual draining of Lodi Lake, a copy of the engineer's letter is attached to this resolution marked as Exhibit A; and

WHEREAS, at the current rate of erosion, Pigs Lake may not exist in 3 to 5 years if actions are not taken to save it; and

WHEREAS, significant cost and regulatory issues make physical bank restoration efforts impossible in the short term; and

WHEREAS, one important interim measure to protect the bank is to limit boat wakes by limiting boat speeds to 5 mph; and

WHEREAS, annual draining of the lake is also being terminated as a result of the City funded WID dam; and

WHEREAS, Pigs Lake provides habitat for turtles, wood ducks and other wildlife, and provides significant recreational opportunities for the citizens of San Joaquin County; and

WHEREAS, staff recommends that a restricted speed limit of 5 mph from the Woodbridge Dam to Guild Avenue be implemented.

NOW, THEREFORE, BE IT RESOLVED that the Lodi City Council does hereby formally request that the San Joaquin County Board of Supervisors establish a 5 mph speed limit on the Mokelumne River from the Woodbridge Dam to Guild Avenue.

Dated: March 19, 2008

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I hereby certify that Resolution No. 2008-____ was passed and adopted by the City Council of the City of Lodi in a regular meeting held March 19, 2008, by the following vote:

AYES: COUNCIL MEMBERS –

NOES: COUNCIL MEMBERS –

ABSENT: COUNCIL MEMBERS –

ABSTAIN: COUNCIL MEMBERS –

RANDI JOHL
City Clerk